



## American Chemical Society Wichita Section

April 2012 Newsletter  
Stephen Donnelly, Editor

**Section Meeting**  
Wednesday, 25 April, 7:00 PM  
Sunflower Room of the Rhatigan Student Center  
Wichita State University  
Wichita, Kansas

**Meal (optional):** 5:30 p.m.

We will meet in the Sunflower room of the Rhatigan Student Center on the campus of Wichita State University. The dinner will be a Wichita Barbecue Buffet and the cost is \$12.00. The section will cover half the cost for students who also attend the presentation.

Contact Jim Bann at [jim.bann@wichita.edu](mailto:jim.bann@wichita.edu) for additional information. Go to [wichita.edu](http://wichita.edu) for directions to the WSU campus and a campus map.

**Meeting:** 7:00 p.m.,

The meeting will take place in the same room as the dinner. In addition to the talk detailed below we will also be honoring a number of outstanding students who will be graduating this May with a degree in chemistry.

**Speaker:** Dr. Rafael Luque, Universidad de Cordoba Spain

**Title:** *Biofuels: Present and Future*

Environmental issues, the growing demand for energy, political concerns and the medium-term depletion of petroleum created the need for the development of sustainable technologies based on renewable raw materials. The so-called biofuels might help to meet the future energy supply demands as well as contributing to a reduction of greenhouse gas emissions. Crop-based biofuels including biodiesel and bioethanol have emerged as a real alternative to the use of gasoline and conventional diesel in transportation. An exponential increase in the consumption of such biofuels has tak-

en place in the last few years in all Europe. In Spain, 6.8% of the total primary energy consumption in 2006 corresponded to that of renewable energies, from which the majority (>80%) was consumed in biofuels for transport, mainly biodiesel and little bioethanol from food crops. However, with the increase in the demand for the utilization of biofuels for transport, we are reaching a point in which we will not be able to supply our future energy needs unless we focus on alternatives to crop-based biofuels. Although this topic is highly controversial and many investigations are currently ongoing, we aim to give a brief overview about certain aspects of the complex biofuel issue worldwide, providing the latest update of the production and potential of biofuels in the transport sector including types of biofuel, feedstocks and technologies and some of the possible socio economic, environmental and political implications of the widespread use of biofuels in a world-case scenario.

### Speaker Bio:

Rafael Luque graduated from Universidad de Cordoba in Spain (1996-2001) and then did his Ph.D. (2002-2005) at the same University under a European Ph.D. scheme that included two short stays of 9 months in total in the Green Chemistry Centre of Excellence at the University of York. He then moved back to York to work as a Green Chemistry Research Fellow under the supervision of Prof. James H. Clark to work in the preparation of functionalised mesoporous materials and their applications in catalysis. His preliminary studies at UoY led to the discovery of the Starbon® materials, of which the applicant is co-inventor (2 patents awarded). Starbon® is currently a registered trademark, the subject of three patent applications, and materials are commercially available from Sigma-Aldrich as well as being the base of the founded SPANBON spin-off company at the Universidad de Cordoba in 2010.

Dr. Luque was also awarded an IRPPF project (Innovation and Research Pump Priming Funds) as principal investigator to study the economic, environmental and chemical feasibility of biodiesel production as petrol-fuel replacement. This multidisciplinary project was the starting point to setting up a network for a 2008-2010 FP7 Support Action project entitled, "Developing advanced biorefinery schemes for integration into existing oil production/transesterification plants" (SUSTOIL) in which the applicant was involved in its preparation and lead contact from Universidad de Cordoba. Promising results together with a huge potential for future development led to the foundation of the spinoff

company SENECA GREEN CATALYSTS S.L. in 2007 with Dr. Luque as one of the co-founders.

Dr. Luque is also the editor of the book "Handbook of biofuels: processes and technologies", published by Woodhead publishing and is the editor of the special issue "C-X couplings in organic chemistry" for the journal Current Organic Synthesis. He was also invited as keynote speaker by the Thai Government to the World Alternative Energy Sciences Expo 2009 in Bangkok (Thailand) where he delivered the keynote speech "Situation of biofuels in Spain: present and future". His latest research has been focused on nanomaterials for the production of energy and high added value chemicals, biomass valorisation and biofuels/biorefineries.

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### Chair's Message

Dear Section Members:

Belated wishes for a happy and healthy year!

Congratulations to Dr. Robert Schmidt for his 60 years of ACS service!

Congratulations to the 2012 Outstanding Senior Awardees! Thanks to Dr. Thomas Wiese for his service on selection process and the professors who had taught and nominated students.

Our February meeting with Dr. Frankie Wood-Black at Emporia University had very good participation with 38 people present in Emporia and several more people linked through interactive technology from Fort Hays State University site. Highlights of Dr. Wood-Black's talk titled "Unintended Consequence" appeared in the Emporia State University Student Newspaper. The article can be viewed on our section website.

<http://wichita.sites.acs.org/March%201%202012%20talk.pdf>.

I look forward to seeing many of you during the April meeting celebrating outstanding students and longtime ACS member and hosting a speaker from Spain, Dr. Rafael Luque.

Best regards,

**Jung Ho**, Chair, ACS Wichita Section

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### Wichita Section Web Site:

<http://wichita.sites.acs.org/>

### 2012 Section Officers

#### **Jung Oh**, *Chair*

Department of Arts, Science, and Business  
Kansas State University at Salina  
Salina, KS 67401  
785-826-2915  
[jroh@sal.ksu.edu](mailto:jroh@sal.ksu.edu)

#### **Stephen Donnelly**, *Chair Elect*

Fort Hays State University  
[sdonnell@fhsu.edu](mailto:sdonnell@fhsu.edu)

#### **Janice Crowley**, *Secretary*

Wichita Collegiate School  
[jpcrowley@cox.net](mailto:jpcrowley@cox.net)

#### **Malonne Davies**, *Treasurer*

Emporia State University  
[mdavies@emporia.edu](mailto:mdavies@emporia.edu)

#### **Paul Rillema**, *Councilor* (2011 - 2013)

Department of Chemistry  
Wichita State University  
Wichita, KS 67260-0051  
316-978-3732  
[paul.rillema@wichita.edu](mailto:paul.rillema@wichita.edu)

#### **Tom Wiese**, *Alternate Councilor* (2011 - 2013)

Fort Hays State University  
[twiese@fhsu.edu](mailto:twiese@fhsu.edu)

### Executive Committee Members

#### **Jim Bann**, *Immediate Past Chair*

Wichita State University  
[jim.bann@wichita.edu](mailto:jim.bann@wichita.edu)

#### **Robin Jackson**

Central Christian College  
[robin.jackson@centralchristian.edu](mailto:robin.jackson@centralchristian.edu)

#### **Stephen Donnelly**, *Newsletter Editor*

Fort Hays State University  
[sdonnell@fhsu.edu](mailto:sdonnell@fhsu.edu)

#### **Alan Oberley**

Newman University  
[oberleya@newmanu.edu](mailto:oberleya@newmanu.edu)

#### **Eric Trump**, *Webmaster*

Emporia State University  
[etrump@emporia.edu](mailto:etrump@emporia.edu)

#### **Tom Wiese**

Fort Hays State University  
[twiese@fhsu.edu](mailto:twiese@fhsu.edu)